



# 2018 Spring Electrofishing (SEII) Summary Report

## Bass Lake (WBIC 150900)

### Waushara County

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### Introduction and Survey Objectives

In 2018, the Department of Natural Resources conducted a one night electrofishing survey of Bass Lake in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey are to characterize species composition, relative abundance, and size structure. The following report is a brief summary of all activities conducted, general status of fish populations and future management options.

Acres: 15.5      Shoreline Miles: 0.7      Maximum Depth (feet): 28  
Lake Type: Drainage      Public Access: Walk in Public Access on Shoreline  
Regulations: All species statewide default regulations.

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### Survey Information

Site location	Survey Date	Water Temp. (F)	Target Species	Total Miles Shocked	No. of Stations	Gear	Dippers
Bass Lake	5/23/2018	73	All	0.7	1	Mini-Boomshocker	1

### Fish Metric Descriptions PSD, CPUE, and LFD

**Proportional Stock Density (PSD)** is an index used to describe size structure of fish populations. It is calculated by dividing the number of quality size fish by the number of stock size fish for a given species. PSD values between 40 - 60 generally describe a balanced fish population.

**Catch per unit effort (CPE)** is an index used to measure fish population relative abundance, which simply refers to the number of fish captured per unit of distance or time. For electrofishing surveys, we typically quantify CPUE by the number and size of fish per hour of electrofishing the shoreline. CPUE indexes are compared to statewide data by percentiles. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state.

**Length frequency distribution (LFD)** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals. Smaller fish (or younger age classes) may not always be represented in the length frequency due to different habitat usage or sampling

### Survey Method

- Bass Lake was sampled according to spring electrofishing (SEII) protocols as outlined in the statewide lake assessment plan. The primary objective for this sampling period is to count and measure adult bass and panfish. Other gamefish may be sampled but are considered by-catch as part of this survey.
- The entire shoreline of 0.7 miles was sampled using a mini boomshocker. All fish were identified to species and gamefish and panfish were measured for length.
- Fish metrics used to describe fish populations include proportional stock density, catch per unit effort, and length frequency distributions.



### Size Structure Metrics

Species	Total	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
Bluegill	49	5.3	2.6 - 8.0	3.0 and 6.0	45	19	42%	68th	Moderate - High
Largemouth Bass	2	14.1	12.0 - 16.2	8.0 and 12.0	2	2	100%	-	High
Yellow Perch	5	4.7	4.1 - 5.5	5.0 and 8.0	3	0	0%	-	Low
Pumpkinseed	7	6.9	6.1 - 7.6	3.0 and 6.0	7	7	100%	-	High

### Abundance Metrics

Species	Stock Size CPE (No. per Hour)	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE (No. per hour)	Length Index Percentile Rank	Length Index Abundance Rating
Bluegill	128 (> 3.0 inches)	48th	Moderate	≥ 7.0 inches	50	83rd	Moderate - High
Largemouth Bass	5 (> 8.0 inches)	22nd	Low	≥ 14.0 inches	3	37th	Moderate
Yellow Perch	8 (> 5.0 inches)	30th	Low	≥ 8.0 inches	0	-	Low
Pumpkinseed	18 (>3.0 inches)	50th	Moderate	≥ 7.0 inches	10	92nd	High



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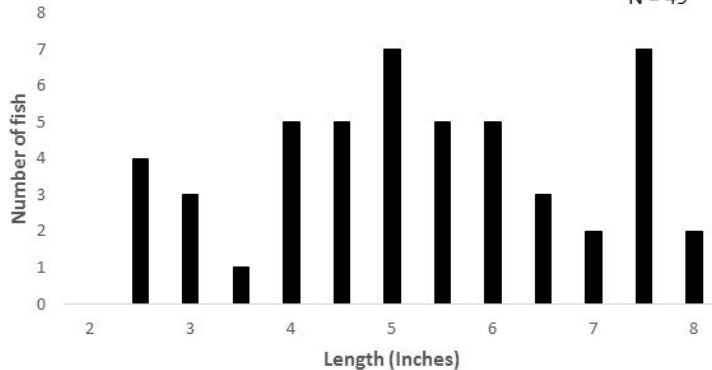
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Bluegill Length Distribution - Bass Lake

N = 49



## Summary/History

A total of 64 fish in 5 species were collected in our survey. The most frequently encountered and common species were bluegill (49), and pumpkinseed (7). Other species sampled in lower abundance included black crappie (1), largemouth bass (2), and yellow perch (5). Largemouth bass were the dominant gamefish captured in our survey. Electrofishing with the mini-boomshocker appears to be a limiting factor in sampling fish in this particular survey.

- Panfish populations were mainly comprised of bluegill. Bluegill were found in moderate densities, and the size structure was moderate as well with 42% of the catch greater than 6.0 inches.

### History

The last time that this survey was conducted was in 2010 using a maxi boomshocker. The maxi boom is much more effective and catch rates were much higher. The mini boom was used in 2018 because access had deteriorated since the last survey.

Bass Lake is the headwaters of the Little Lunch Creek. The water source of the lake originates from a minor inlet on the north end and numerous springs around the shoreline. Approximately one-half of the length of the outlet has been dredged. This was done in 1949 and was reported to have reduced the lake size from an estimated 18-20 acres to its present size by lowering the lake level. Littoral bottom materials are primarily muck and sand over a marl base. Marl is soft, clay-like sediment composed of carbonates of calcium and magnesium and remnants of shells.

Northern pike, largemouth bass, bluegills, black crappies and bullheads have made up the majority of the fishery and still do. There are still no homes located on the shoreline. A local landowner used to keep four boats on the lake and permit access to anyone who respected his property (1970). This is no longer the case.

Public access was obtained in 1983 when some of the property around Bass Lake was purchased by the State of Wisconsin and designated a natural area. A natural area is defined as a tract of land or water that represents the last vestiges of Wisconsin's native landscape as it existed prior to intensive European settlement. To access the lake you must walk an access lane easement ~.75 miles south from the parking lot off of Highway YY.

## Management Options

This survey was primarily intended to assess largemouth bass and panfish populations. Other species are captured but different survey techniques are typically used to assess their population metrics. Therefore, management recommendations are focused on bass and panfish.

### Largemouth Bass

- Management Objective: Increase largemouth CPUE of bass > 14.0 inches to more than 20 per hour, increase CPUE of bass > 8.0 inches in 50 - 100 per hour and increase the PSD to around 40-50%.
- Management Action: Survey results from 2010 showed that there were moderate numbers and better size structure when the maxi boom was used. This may be the preferred sampling method in the future.

### Panfish

- Panfish abundance was low and size structure was moderate. Population metrics from this survey showed a decline since 2010. However it is not known to what extent this decline is from the use of the mini-boom vs. standard electrofishing boat between the surveys.
- Management Objective: Maintain bluegill electrofishing PSD (%>6.0 inches) at 40% or better and increase relative abundance to 200 - 300 per hour ≥ 3 inches. Changes to the panfish regulations (reduced bag) may be an option reach this goal.

### Common Carp

- Many large carp were present along the southeast shoreline of Bass Lake. Spawning activity was making the water very turbid on the east to southeast side of the lake, which in turn effected the efficiency of the sampling. There is some concern with the observed increase in carp abundance. These fish more than likely entered Bass Lake via the Little Lunch Creek during high water. There are no plans at this time to for any control measures.

### Survey Schedule

- Currently Bass Lake is on an 8 year sampling rotation and is scheduled to be done again in 2026.

### Habitat

Bass Lake has a walk in access, so fishing pressure is not high. Having natural shoreline and habitat is critical to preserving the integrity of the lake and fishery. The state-owned natural area on the lake should greatly help to preserve the natural shoreline.